

What is claimed is:

1. A helicopter, comprising:

a fuselage having a tail portion and a vertical stabilizer supported by and projecting upwardly and rearwardly from the tail portion;

5 a tail rotor mounted on the vertical stabilizer for rotation about a horizontal axis, said tail rotor being positioned laterally outwardly from one side of the vertical stabilizer;

said vertical stabilizer having an upper end, a lower end and a rear edge recess located between the upper end and the lower end, said recess having a laterally convex rear edge; and

10 said tail portion of the fuselage having a rear end extension that extends rearwardly from the vertical stabilizer and narrows in width as it extends rearwardly, said rear end extension of the fuselage providing vertical area to replace vertical area removed by the recess in the vertical stabilizer.

2. The helicopter of claim 1, wherein the rear end extension of the tail portion of the fuselage has a laterally convex upper edge and a laterally convex lower edge.

3. The helicopter of claim 2, wherein a corner is formed where the rear edge of the vertical stabilizer meets the upper edge of the rear end extension of the fuselage, and said corner is laterally convex and vertically concave.

4. The helicopter of claim 1, wherein the upper end of the vertical stabilizer is wider than the vertical stabilizer is in the region of the rear edge recess, and the upper end of the vertical stabilizer forms a corner with the rear edge recess, said corner being laterally convex and vertically concave.

5. The helicopter of claim 1, wherein the rear end extension of the tail portion of the fuselage has a forward portion including sides that are convex in the vertical direction and a rear end portion that is substantially straight in the vertical direction.

6. A helicopter, comprising:
a fuselage having a tail portion and a vertical stabilizer supported by and projecting upwardly and rearwardly from the tail portion;
a tail rotor mounted on the vertical stabilizer for rotation about a horizontal axis, said tail rotor being positioned laterally outwardly from one side of the vertical stabilizer; and
said vertical stabilizer having an upper end, a lower end, a laterally convex forward edge, and a rear edge recess located between the upper end and the lower end, said rear edge recess having a laterally convex rear edge.
7. The helicopter of claim 6, wherein the upper end of the vertical stabilizer is wider than the vertical stabilizer is in the region of the rear edge recess, and the upper end of the vertical stabilizer forms a corner with the rear edge recess, said corner being laterally convex and vertically concave.
8. The helicopter of claim 6, wherein said tail portion of the fuselage has a rear end extension that extends rearwardly from the vertical stabilizer and narrows in width as it extends rearwardly.
9. The helicopter of claim 8, wherein the rear end extension of the tail portion of the fuselage has a laterally convex upper edge and a laterally convex lower edge.
10. The helicopter of claim 9, wherein a corner is formed where the rear edge of the vertical stabilizer meets the upper edge of the rear end extension of the fuselage, and said corner is laterally convex and vertically concave.
11. The helicopter of claim 8, wherein the rear end extension of the tail portion of the fuselage has a forward portion that has sides that are convex in the vertical direction and a rear end portion that is substantially straight in the vertical direction.

12. A retrofit method, comprising:

providing a helicopter that includes a fuselage having a tail portion, a vertical stabilizer supported by and projecting upwardly and rearwardly from the tail portion, a substantially V-shaped rear edge on the vertical stabilizer and a tail rotor mounted on the vertical stabilizer for rotation about a horizontal axis, said tail rotor being
5 positioned laterally outwardly from one side of the vertical stabilizer;

removing the rear edge portion of the vertical stabilizer and a rear end portion of the tail portion of the fuselage;

providing a new rear edge portion for the vertical stabilizer that has an upper
10 end, a lower end and a rear edge recess located between the upper end and the lower end, said recess having a laterally convex rear edge;

providing a new rear end portion for the tail section of the fuselage; and

securing the new rear edge portion of the vertical stabilizer and the new rear portion of the tail section of the fuselage to the vertical stabilizer and the tail portion of
15 the fuselage.

13. The method of claim 12, wherein the new rear end portion of the tail portion of the fuselage has a laterally convex upper surface and a laterally convex lower surface.

14. The method of claim 13, including forming a corner where the rear edge portion of the vertical stabilizer meets the upper edge of the new rear end portion and making said corner laterally convex and vertically concave.

15. The method of claim 12, wherein the new rear end portion has a forward part including sides that are convex in the vertical direction and a rear end part that is essentially straight in the vertical direction.

16. The helicopter of claim 13, wherein the upper end of the vertical stabilizer is wider than the vertical stabilizer is in the region of the rear end recess, and the upper

end of the vertical stabilizer forms a corner with a rear edge recess, said corner being laterally convex and vertically concave.

17. The helicopter of claim 12, wherein the new rear end portion extends rearwardly from the vertical stabilizer and narrows in width as it extends rearwardly.

18. The helicopter of claim 17, wherein the new rear end portion has a lower surface that is both laterally convex and longitudinally convex.